

Missouri
Department of
Natural Resources

**LITTLE DRY FORK
WBID 1864**

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
301 West High Street
Jefferson City, MO 65102

PREPARED BY:
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1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

Field Data Sheets for Recreational Use Stream Surveys

AK 5/12/07

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Little Dry Fork
Missouri Water Body Identification (WBID) Number:	1864
8-digit HUC:	07140102
County:	Phelps
Upstream Legal Description (from Table H):	5, 36N, 7W
Downstream Legal Description (from Table H):	13, 34N, 32W RUC 8, 37N, 7W
Number of sites evaluated	1
List all sites numbers, listed ensequantly upstream to downstream:	Site 1

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	Stately Mansions Mobile Manor
Discharger Permit Number(s):	MO 0108391

IV. UAA Surveyor (please print legibly)

Name of Surveyor	Nick Muenks	Telephone Number:	573-443-4100
Organization/Employer:	MEC Water Resources		
Position:	Water Quality Scientist		

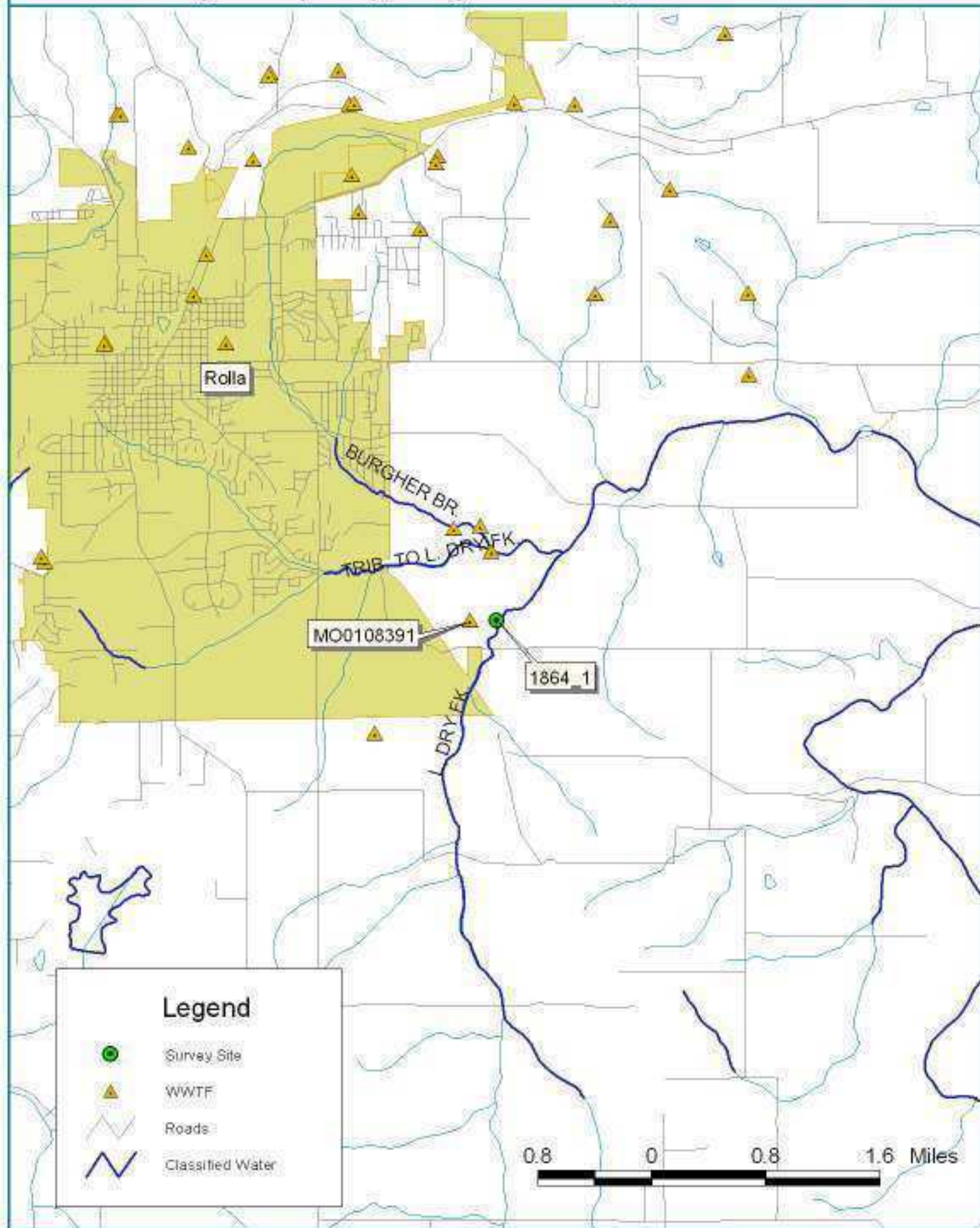
Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Nick Muenks Date: 5/11/07

RUC

5-14-07

Little Dry Fork (1864), Length = 4.0 mi., Permit # MO108391



WBID# 1864
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Date & Time: <u>5/11/07 8^{am} 9:00</u>	Site Location Description (e.g., road crossing): <u>Downstream @ 1/4 mile from Dewing Lane (Cnty Rd 3160)</u>
Personnel (Data Collectors): <u>NM/JR</u>	
Current Weather Conditions: <u>Cloudy</u>	Facility Name: <u>Statelty Mansions Mobile Manor</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0108391</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0612024</u>		Y: <u>4198239</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>17.2</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>1864-1-649</u>	<u>Downstream T1</u>		
<u>1864-1-650</u>	<u>upstream T1</u>		
<u>1864-1-651</u>	<u>Upstream T1</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: One stream bank was typically steep

WBID# 1864
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input checked="" type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE	6		3.40	15	710	0.11
RUN	8		5.00	64	750	0.44
POOL	4		1.70	100	675	>1.0

Downstream View's Physical Descriptions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

10	% Cobble	75	% Gravel	10	% Sand	0	% Silt	5	% Mud/Clay	0	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

About 50% of substrate with benthic algae, 10% of site had aquatic plants

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Mike Muench Date of Survey: 5/11/07

Organization: MEC Water Resources Position: Water Quality Scientist

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>1864</u>		Site #: <u>1</u> <small>(WBID_Site#)</small>		Dissolved Oxygen	
Estimated Channel Incision: _____ (m) (height between low bank width and water)		GPS Location (taken at transect 1): UTM X: <u>01612024</u> UTM Y: <u>4198239</u>		Date: <u>5-11-07</u>	Time: <u>9:30</u>
Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>17.2</u> (feet)				Dissolved Oxygen: <u>7.39</u> (mg/L)	
Average Stream Width: <u>8</u> (meters)		Length of Survey Segment: <u>160</u> (meters) <small>(20x average stream width)</small>		Dissolved Oxygen: <u>81.6</u> (% sat)	
Field Staff: <u>Nick Muenks Jerrod Roberts</u>				Specific Cond: <u>346.7 7m</u> ($\mu\text{S/cm}$)	382.2
				Water Temperature: <u>20.2</u> ($^{\circ}\text{C}$)	

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
1	0.20	0.10	0.00	0.26	0.30	0.11	0.0	0.16	0.00	0.17	1.50	0.11	0.50	0.10	1.0	0.10	0.40	0.10	0.90	0.10	1.20	0.12 ^{Nm} 0.10	
2	0.91	0.40	0.70	0.45	1.05	0.45	0.75	0.70	1.30	0.85	1.65	0.10	0.75	0.13	1.70	0.12	0.90	0.20	1.21	0.10	2.00	0.15 ^{Nm} 0.12	
3	1.62	0.49	1.40	0.57	1.80	0.61	1.50	0.70	2.60	0.70	1.80	<0.10	1.00	0.12	1.80	0.14	1.40	0.20	1.52	0.10	2.80	0.25 ^{Nm} 0.15	
4	2.33	0.56	2.10	0.60	2.55	0.63	2.25	0.70	3.90	0.98	1.95	0.10	1.25	0.13	2.20	0.17	1.90	0.24	1.83	0.10	3.60	0.34 ^{Nm} 0.25	
5	3.04	0.53	2.80	0.55	3.30	0.65	3.00	0.70	5.20	0.80	2.10	<0.10	1.50	0.19	2.60	0.21	2.40	0.18	2.14	0.15	4.40	0.39 ^{Nm} 0.34	
6	3.75	0.46	3.50	0.40	4.05	0.64	3.75	0.70	6.50	0.60	2.25	<0.10	1.75	0.20	3.00	0.23	2.90	0.15	2.45	0.25	5.20	0.37 ^{Nm} 0.39	
7	4.46	0.35	4.20	0.38	4.80	0.64	4.50	0.95	7.80	0.43	2.40	<0.10	2.00	0.24	3.40	0.36	3.40	0.16	2.76	0.30	6.00	0.49 ^{Nm} 0.37	
8	5.17	0.35	4.90	0.30	5.55	0.45	5.25	0.66	9.10	0.37	2.55	<0.10	2.25	0.20	3.80	0.40	3.90	0.16	3.07	0.33	6.80	0.49 ^{Nm} 0.49	
9	5.88	0.25	5.60	0.18	6.30	0.28	6.00	0.50	10.40	0.30	2.70	<0.10	2.50	0.15	4.20	0.41	4.40	0.11	3.38	0.24	7.60	0.33 ^{Nm} 0.49	
10	6.59	0.20	6.30	0.13	7.05	0.17	6.75	0.31	11.70	0.28	2.85	0.10	2.75	0.14	4.60	0.44	4.90	<0.10	3.69	0.30	8.40		0.33
11	7.30	0.12	7.00	0.10	7.80	0.10	7.50	0.10	13.00	0.10	3.00	0.11	2.00	0.10	5.00	0.30	5.40	0.10	4.00	0.17	9.20		0.16
12	7.90	0	7.70	0	8.40	0	7.70	0	13.40	0	3.40	0	3.60	0			5.70	0	4.20	0	9.35		0
Feature Type (riffle, run, or pool)	60 pool		70 pool		60 pool		20 pool		40 pool		40 riffle		60 run		run		30 run		20 run		0.75 pool		

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Nick Muench Date: 5/11/07
BZC 5-14-07

WBID# 1864



Site# 1 Photo ID# 1864-1-649, Downstream T2



Site# 1 Photo ID# 1864-1-650, Upstream T1



Site# 1 Photo ID# 1864-1-651, Upstream T1

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name Little Dry Fork (Class C section) (**WBID #** 1864)

I. Introduction

Date & Time (include AM or PM): 5/11/07 9:00

Interviewed: ☒ In person ☐ By phone ☐ By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) Property owner

Interviewer introduction to Interviewee: "My name is _____, I work for _____ (name of your employer), and I am collecting information on how people use _____ (name of the stream)."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

☒ Yes ☐ No If yes, list contact information for the interviewee below:

Legal name: Floyd Hoffman

Current mailing address: 11660 Hwy 42 Lot A14

Daytime phone number: (573) 634-4242

E-mail address (optional): _____

2.a.) Do you live in this area? ☒ Yes ☐ No

If yes, how many years? _____

2.b.) If you don't live nearby, are you still familiar with this stream? ☐ Yes ☐ No

If yes, how many years? _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) ☒ Yes ☐ No

If yes, proceed to "II. Personal Use?".

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?

☐ Yes ☒ No

If yes, proceed to #3.

If no, proceed to #2.

2.a.) List reasons stream not used.

Too shallow most of the year

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

<i>Whole Body Contact Recreation</i>			
Swimming <input type="checkbox"/>	Tubing <input type="checkbox"/>	Snorkeling/Skin Diving <input type="checkbox"/>	Water Skiing <input type="checkbox"/>

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

<i>Secondary Contact Recreation</i>				
Fishing <input type="checkbox"/>	Wading <input type="checkbox"/>	Boating <input type="checkbox"/>	Trapping <input type="checkbox"/>	Other: <input type="checkbox"/> List: _____

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? ☐ Yes ☒ No

If yes, proceed to #2.

If no, proceed to, "IV. Anecdotal Use?".

2.) What kinds of uses have you witnessed?

<i>Whole Body Contact Recreation</i>			
Swimming <input type="checkbox"/>	Tubing <input type="checkbox"/>	Snorkeling/Skin Diving <input type="checkbox"/>	Water Skiing <input type="checkbox"/>

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation

Fishing ☐ Wading ☐ Boating ☐ Trapping ☐ Other: ☐ List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? ☐ Yes ☒ No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation

Swimming ☐ Tubing ☐ Snorkeling/Skin Diving ☐ Water Skiing ☐

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing ☐ Wading ☐ Boating ☐ Trapping ☐ Other: ☐ List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol).

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? ☐ Yes ☒ No
If yes, that person's contact info (name, address, phone, directions?)

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee:

2.) From the Interviewer: *Mr Huffman also owns the property along WBD 1865 and said it was not used as a stream for recreation either.*

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

☒ Yes ☐ No If yes, how (check all that apply):

Workshop? (if so, enter date):

On-line training seminar?

Followed Interview Instruction Sheets? ☒

Other *previously conducted UAA's*

Interviewer Information:

Signature: *Alick Muenks*

Printed Name: *Alick Muenks*

Employer (where applicable): *MFC Water Resources*

Interviewer's phone #: *573-443-4100*

E-mail: *AMuenks@mfcwater.com*